

Claims.

1. A method of broadcasting television-quality programs in real time to a client device in a system comprising a Production Process center (PPC) (2), a remote service provider computer (3) and a plurality of remote client devices (4) each of which is connected to the service provider computer (3) by way of an uncontended communication channel (5), the method comprising the production process center (2) transmitting a television quality program to the remote client device (4) via the remote service provider computer (3), the method further comprises the step of:
- (a) the production process center (2) receiving television program data from a remote television program source;
 - (b) the production process center (2) processing the received television program data and converting the television program data into a plurality of digital television program viewing formats;
 - (c) transmitting at least one of the television program viewing formats to the remote service provider computer (3) along a dedicated uncontended connection line (6) interconnecting the production process center (2) and the remote service provider computer (3); and
 - (d) the service provider computer (3) transmitting one television program viewing format to the remote client device (4) over the uncontended communication channel (5).
2. A method as claimed in claim 1 in which the remote service provider computer (3) comprises an Internet Service Provider (ISP) computer and the step of transmitting at least one of the television program viewing formats to the service provider computer (3) comprises transmitting at least one of the television program viewing formats to the ISP computer.

3. A method as claimed in claim 1 in which the remote service provider computer (3) comprises a mobile communications network service provider computer and the step of transmitting at least one of the television program viewing formats to the service provider computer (3) comprises transmitting at least one television program viewing format to the mobile communications network service provider computer.
4. A method as claimed in claim 1 in which the remote service provider computer (3) comprises a cable network service provider computer and the step of transmitting at least one of the television program viewing formats to the service provider computer (3) comprises transmitting at least one television program viewing format to the cable network operator computer.
5. A method as claimed in any preceding claim in which the step of transmitting at least one television program viewing format to the service provider computer (3) over a dedicated uncontended connection line (6) further comprises transmitting at least one television program viewing format to the service provider computer over a dedicated uncontended dual connection link.
6. A method as claimed in any preceding claim in which the step of transmitting at least one television program viewing format to the service provider computer (3) over a dedicated uncontended connection line (6) further comprises transmitting at least one television program viewing format to the service provider computer over a dedicated uncontended satellite link.
7. A method as claimed in any preceding claim in which the step of processing the received television program data further comprises decoding the received television program data into standard Serial Digital Interface (SDI) format.
8. A method as claimed in any of claims 1 to 6 in which the step of processing the received television program data further comprises decoding the received television program data into standard multi format.

9. A method as claimed in claim 7 or 8 in which the received program data is passed through a multiple signal decoder (13) to decode the received television program data into standard format.
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10. A method as claimed in any preceding claim in which the step of processing the received television program data further comprises editing the received television program data.
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11. A method as claimed in claim 10 in which the step of editing the received television program data further comprises inserting advertisement commercials into the received television program data.
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12. A method as claimed in any preceding claim in which the step of converting the television program data into a plurality of digital television viewing formats comprises passing the television program data through a multiple encoding station (16).
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13. A method as claimed in any preceding claim in which the method further comprises the intermediate step of logging the received television program data in production server computer memory for future use.
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14. A method as claimed in any preceding claim in which the method further comprises the intermediate step of storing metadata relating to each piece of received television program data in production server computer memory.
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15. A method as claimed in any preceding claim in which the method further comprises the intermediate step of pre-encoding the television program data before converting the television program data into a plurality of digital television viewing formats.
16. A method as claimed in any preceding claim in which there is provided a data

center computer (23) having data center memory intermediate the production process center (2) and the service provider computer (3) and connected to the production process center (2) and the service provider computer (3) by way of the dedicated uncontended connection line (6), and the television program viewing format transmitted to the remote service provider computer (3) from the production process center (2) is stored in the data center memory, the datacenters computer (23) transmitting the television program viewing format onwards to the remote service provider computer (3).

- 10 17. A method as claimed in claim 16 in which there are a plurality of data center computers (23), each data center computer (23) being connected to at least one other data center computer (23) by way of a back channel multiple cross connect uncontended connection line, the method including the step of each data center (23) sharing a television program viewing format with the data center computer (23) connected thereto over the back channel multiple cross connect uncontended connection line.
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18. A method as claimed in claim 16 in which the data center computer (23) is provided with means to edit the television program viewing format and the method further comprises the step of the data center computer editing the television program viewing format received from the production server computer (2).
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19. A method as claimed in claim 18 in which the step of editing the television program viewing format at the datacenters computer (23) further comprises inserting location specific advertisement commercials into the television program viewing format.
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20. A method as claimed in any preceding claim in which the method further comprises the initial step of the remote client device (4) selecting a television program viewing format for reception from the remote service provider computer (3).
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21. A method of controlling the transmission of television quality programs to a remote client device (4) by a service provider computer (3), in a system comprising a plurality of remote client devices (4) each connected to the service provider computer (3) by way of an uncontended broadband connection (5), and
5 a remote production process center (2) connected to the service provider computer (3), the service provider computer (3) receiving a television quality program from the remote production process center (2) and the service provider computer (3) transmitting the television quality program to the remote client device (4), the method further comprises the steps of:
- 10 (a) the service provider computer (3) receiving television-quality programs from the remote production process center (2) over a dedicated uncontended connection line (6) inter-connecting the remote production process center (2) and the service provider computer (3) in a plurality of
15 television-quality program viewing formats; and
- (b) on request from one of the remote client devices (4), transmitting one of the television-quality program viewing
20 formats received from the remote production process center (2) to the remote client device (4) over the uncontended broadband connection line (5).
22. A method as claimed in claim 21 in which the initial step of the remote client
25 device (4) selecting a television-quality program viewing format is performed.
23. A method as claimed in claim 21 or 22 in which the service provider computer (3) comprises an internet service provider (ISP) computer and the ISP computer performs the steps of receiving the television-quality programs and transmitting
30 one of the television-quality program viewing formats to the remote client device (4).
24. A method as claimed in claim 21 or 22 in which the service provider computer (3)

comprises a mobile communications network service provider computer and the steps of receiving the television-quality programs and transmitting one of the television-quality program viewing formats to the remote client device (4) are performed by the mobile communication network service provider computer.

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25. A method as claimed in claims 21 or 22 in which the service provider computer (3) comprises a cable network service provider computer and the cable network service provider computer performs the steps of receiving the television quality programs and transmitting one of the television quality program viewing formats to the remote client device (4).

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26. A method as claimed in any of claims 21 to 25 in which the method further comprises the step of inserting advertisement commercials into the television-quality programs by the service provider computer (3) before onward transmission to the remote client device (4).

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27. A method as claimed in any of claims 21 to 26 in which the method further comprises the step of the service provider computer (3) monitoring television-quality programs sent to a remote client device (4).

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28. A method as claimed in claim 27 in which the service provider computer (3) generates billing information for a remote client device (4) based on the monitoring of television-quality programs sent to that remote client device (4).

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29. A method as claimed in any of claims 21 to 28 in which there is further provided a remote data center computer (23) connected to the dedicated uncontended connection line (6) intermediate the service provider computer (3) and the remote production process center (2) and television-quality programs are passed through the data center computer (23) en route to the service provider computer (3).

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30. A method as claimed in claim 29 in which the method comprises the step of inserting advertisement material into the television quality programs by the remote data center computer (23) before onward transmission to the service

provider computer (3).

31. A method of receiving real time television-quality programs in a client device (4),
the client device being part of a system comprising a plurality of client devices (4)
5 each connected to a remote service provider computer (3) by way of an
uncontended communication link (5), and a remote production process center (2)
connected to the remote service provider computer (3) by a dedicated
uncontended connection line (6) therebetween, the method comprising the steps
of:
- 10 (a) the client device (4) making a television-quality program
viewing request to the remote production process center
(2) via the remote service provider (3); and
- 15 (b) receiving the television-quality program associated with
the television quality program viewing request in a suitable
television quality program viewing format.
32. A method as claimed in claim 31 in which the method includes the initial step of
20 the client device (4) selecting a suitable television quality program viewing format
from a plurality of available television quality program viewing formats.
33. A method as claimed in claims 31 or 32 in which the service provider computer
(3) is an Internet Service Provider (ISP) computer and the step of making a
25 television quality program viewing request to the remote production process
center (2) is made via the ISP computer.
34. A method as claimed in claims 31 or 32 in which the service provider computer
(3) is a mobile communications network service provider computer and the step
30 of making a television-quality program viewing request to the remote production
process center (2) is made via the mobile communications network service
provider computer.

35. A method as claimed in claim 31 or 32 in which the service provider computer (3) is a cable network service provider computer and the step of making a television quality program viewing request to the remote production process center (2) is made via the cable network service provider computer.

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36. A method as claimed in any of claims 31 to 35 in which the method further comprises the initial steps of the client device (4) registering with the remote service provider computer as a system user.

10 37. A system for broadcasting television-quality programs to a client device (4) comprising a production process center (2), a remote service provider computer (3) and a plurality of remote client devices (4) each connected to the remote service provider computer (3) by way of an uncontended communication link (5), the production process center (2) transmitting a television-quality program to the
15 remote client device (4) via the remote service provider computer (3), the system further comprising:

(a) a dedicated uncontended connection line (6) inter-
connecting the production process center (2) and the
20 service provider computer (3), the production process center (2) sending the television-quality program to the service provider computer (3) along the dedicated uncontended connection line (6);

25 and the production process center (2) comprising:

(b) a receiver for receiving television program data from a remote television program source;

30 (c) a processor for processing the received program data and means to convert the television program data into a plurality of digital television viewing formats;

- (d) a transmitter for transmitting the television quality program in at least one of the digital television viewing formats to the service provider computer along the dedicated uncontended connection line.

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38. A system as claimed in claim 37 in which the remote service provider computer (3) comprises an Internet Service Provider (ISP) computer.

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39. A system as claimed in claim 37 in which the remote service provider computer (3) comprises a mobile communications network service provider computer.

40. A system as claimed in claim 37 in which the remote service provider computer (3) comprises a cable network service provider computer.

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41. A system as claimed in any of claims 37 to 40 in which the production process center's processor further comprises means to decode a plurality of incoming data formats into a single standard format.

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42. A system as claimed in any of claims 37 to 41 in which the production process center comprises a pre-encoder to pre-encode the television program data.

43. A system as claimed in any of claims 37 to 42 in which the production process center's means to convert the television program data into a plurality of digital television viewing formats comprises a multiple encoding station (16).

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44. A system as claimed in any of claims 37 to 43 in which the production process center (2) has production process center memory and means to log television program data in production process center memory.

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45. A system as claimed in claim 44 in which the production process center has means to store metadata relating to television program data in production process center memory.

46. A system as claimed in any of claims 37 to 45 in which the dedicated uncontended connection line (6) is a dual-connectivity dedicated uncontended connection line.
- 5 47. A system as claimed in any of claims 37 to 46 in which there is additionally provided a satellite link (21) connecting the production process center (2) and the remote service provider computer (3).
- 10 48. A system as claimed in any of claims 37 to 47 in which there is provided a remote data center computer (23) connected to the dedicated uncontended connection line (6) intermediate the production process center (2) and the remote service provider computer (3) acting as an interface between the production process center (2) and the remote service provider computer (3), all data traffic between the production process center (2) and the service provider computer (3) passing through the remote datacenters.
- 15 49. A system as claimed in claim 48 in which the remote data center computer further comprises a media server computer having means to receive and transmit television quality programming data.
- 20 50. A system as claimed in claims 48 or 49 in which there are a plurality of datacenters, each datacenter being connected to at least one other datacenter by way of a multiple back channel cross connect uncontended connection line.
- 25 51. A system as claimed in any of claims 48 to 50 in which there are a plurality of service provider computers located adjacent each data center computer (23) and the data center computer (23) controls the flow of television-quality program data to each of the service provider computers (3).
- 30 52. A system as claimed in claims 48 to 51 in which the data center computer (23) comprises means to edit television program data received from the production process center (2).

53. A system for broadcasting television-quality programs to a remote client device (4) comprising a remote production process center (2), a service provider computer (3) and a plurality of remote client devices (4) each connected to the service provider computer (3) by way of an uncontended communication channel (5), the service provider computer (3) receiving a television-quality program from the remote production process center (2) and transmitting the television-quality program onwards to a remote client device (4), the system further comprising:
- (a) a dedicated uncontended connection line (6) interconnecting the remote production process center (2) and the service provider computer (3), the service provider computer (3) receiving the television-quality program from the remote production process center (2) over the dedicated uncontended connection line (6) in a plurality of television-quality program viewing formats; and
- (b) the service provider computer (3) having a receiver for receiving a television viewing request from a remote client device and a transmitter for transmitting one of the television-quality program viewing formats over the uncontended connection line (5) to the remote client device.
54. A system as claimed in claim 53 in which there is provided a remote data center computer (23) connected to the dedicated uncontended connection line (6) intermediate the service provider computer (3) and the remote production process center (2) and television-quality programs are passed through the data center computer (23) en route to the service provider computer (3).
55. A system as claimed in claims 53 or 54 in which the service provider computer (3) is an Internet Service Provider (ISP) computer.
56. A system as claimed in claims 53 or 54 in which the service provider computer (3) is a Mobile Communications Network service provider computer.
57. A system as claimed in claim 53 or 54 in which the service provider computer (3)

is a cable network service provider computer.

58. A system as claimed in any of claims 53 to 57 in which the service provider computer (3) has means to monitor the television viewing requests of each of the remote client devices (4).
59. A system as claimed in any of claims 53 to 58 in which the service provider computer (3) has means to edit the television quality programs.
60. A computer program comprising program instructions for causing a computer to carry out the method steps performed by the production process center (2) in any of claims 1 to 20.
61. A computer program comprising program instructions for causing a computer to carry out the method steps performed by the service provider computer (3) in any of claims 21 to 30.
62. A computer program as claimed in claims 60 or 61 in which the program is stored on a computer readable medium.
63. A computer program as claimed in claims 60 or 61 in which the program is stored on a carrier signal.